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High Pressure and High Temperature Decomposition Studies of PETN and TATB MICHAEL PRAVICA, HUBERTUS GIEFERS, EDWARD ROMANO, University of Nevada, Las Vegas and High Pressure Science and Engineering Center (HiPSEC), BRIAN YULGA, University of Nevada, Las Vegas and High Pressure Science and Engineering Center (HiPSEC, ZACHARY QUINE, University of Nevada, Las Vegas and High Pressure Science and Engineering Center (HiPSEC), WENGE YANG, High Pressure Collaborative Access Team (HP-CAT) Advanced Photon Source and the Carnegie Geophysical Institution, HANS PETER LIERMANN, High Pressure Collaborative Access Team (HP-CAT), Advanced Photon Source, and the Carnegie Geophysical Institution — We present a variety of high pressure and high temperature studies investigating radiation-induced decomposition of the high explosives PETN and TATB using white beam synchrotron radiation at the Advanced Photon Source. Diffraction line intensities were measured as a function of time using energy-dispersive techniques. By measuring the decomposition rate as a function of pressure and temperature, kinetic and other constants associated with the decomposition reaction were extracted.

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